

Sustainability Summit

The below answer sheet is for your own self-assessment. Please keep your completed questionnaires and answers on file for your record.

Creating Sustainable Outcomes, Wellness, And Performance By Using Industrial Design

1. What are product upcycling, recycling, or reuse possibilities?

- Upcycling is the process of refashioning something old or broken into something new and functional. Turning an old door into a rustic dining table is a fine example of upcycling.
- Reusing means finding a way to use the same item more than once before putting in the bin. Such as using a plastic bag in your kitchen bin or taking it with you the next time you do your shopping.
- Recycling is a viable way of reducing waste and preserving natural resources. For example, aluminium, glass, and paper can be recycled many times.

2. What are the barriers to implementing a circular economy in the building and construction industry?

The barriers emerge from six main groups, namely: environmental, economic, social, organizational, technical, and regulatory barriers.

3. How do we ensure a product's emissions are considered and made during design stage?

Ensuring that a product's emissions are considered during the design stage involves multiple key factors. These include the product design, sourcing of materials, the manufacturing process, and shipping and logistics. To effectively integrate sustainability into the design process, several aspects must be addressed, such as dematerialization, selecting environmentally preferable materials, establishing a green supply chain, focusing on longevity and efficient usage, optimizing product efficiency, and considering circularity. Supporting these efforts, companies should implement six critical enablers, including defining key performance indicators (KPIs) and targets aligned with corporate strategies, incorporating sustainability principles throughout R&D processes, embedding environmental impact data into design support tools, establishing governance structures, enhancing employees' sustainable design capabilities, and fostering external partnerships and internal collaborations to promote innovation and sustainability. These measures collectively contribute to designing products with reduced emissions and a more sustainable impact.

4. What are current & practical examples of Cradle-to-cradle concepts?

Some technologies, such as 3D printers, will play a key role in implementing this philosophy of reuse. These machines produce objects in a closed cycle. Once used and no longer useful, these objects are melted down to produce new ones as needed. The main advantages of this technology are that materials only need to be extracted once and no waste is produced.

Also, landfills contain approximately 40 % of the world's waste, and the 50 largest landfill sites affect the day-to-day lives of 64 million people. Landfills are harmful to the environment as they pollute aquifers, generate emissions and disrupt ecosystems. But what if we could use this waste to generate the electricity that provides the light and heat in our homes? Such a solution already exists in the form of Waste-to-Energy plants.